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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,559	07/16/2004	Andrei Feldman	060546.3	4475
20230 7590 11/26/2007 VORYS SATER SEYMOUR PEASE 1828 L STREET NW ELEVENTH FLOOR WASHINGTON, DC 20036			EXAMINER ABDI, AMARA	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 11/26/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/501,559

Applicant(s)

FELDMAN, ANDREI

Examiner

Amara Abdi

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 11-13, 15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) 5, 7-10, 14, 16 and 19-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 11-13, 15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :11/03/2006  
08/23/2007  
09/24/2007.

**DETAILED ACTION**

1. On the Amendment filed on July 16, 2004, The Applicant has cancelled the claims 5, 7-10, 14, 16, 19, 21-22, 24-25, 28-30, 35-39, and 41-43.
2. Applicant's election without traverse of Group I in the reply filed on 10/22/2007 is acknowledged corresponding to claims 1-4, 6, 11-13, 15, and 17-18.

**Claim Rejections - 35 USC § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6, 13, 15, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poirier (US 5,725,376) in view of Simon et al. (US 6,118,845).

**(1) Regarding claim 1:**

Poirier discloses a method for manufacturing a dental implant drill guide, comprising:

forming a negative impression (column 6, line 43-46), (the negative impression is read as the physical object or model) of the recipient jaw (see the Abstract, line 5-9), (the recipient jaw is read as gum surfaces and teeth);

producing a first digital image of the negative jaw impression (column 6, line 20-23, and column 6, line 49-54), (it is read that the first digital image is produced by a scanner);

Poirier does not explicitly mention, producing a second digital image, comprising the artifacts, and using the first digital image to produce an artifact-corrected computer representation.

Simon et al., in analogous environment, teaches a system and method for the reduction and elimination of image artifacts in calibration of X-ray images, where producing a second digital image (column 3, line 52-58), comprising the artifacts (column 3, line 40-43), and using the first digital image to produce an artifact-corrected computer representation (column 5, line 19-24), (the reducing of artifacts of an image is read as the same concept as the artifact- corrected image).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Simon et al., where producing an artifact-corrected image, in the system of Poirier in order to reducing the visual distraction caused by the marker artifacts (column 5, line 41-44).

**(2) Regarding claim 2:**

Poirier discloses the method, comprising adjusting the negative jaw impression during formation (column 5, line 41-43, and column 6, line 42-46), (it is read that the negative jaw impression is adjustable, since it is able to turn in about two direction) to allow easy manipulation of the impression (column 6, line 43-46) on the recipient jaw (see the Abstract, line 5-9), (the negative jaw impression is read as the physical model, and the recipient jaw is read as the gum surfaces and teeth).

**(3) Regarding claim 3:**

Poirier discloses the method, comprising setting one or more tooth implant models in said negative jaw impression, prior to producing said images (column 8, line 46-48), (it is read that the heads and teeth are implanted in the physical model, then generating a 3D computer model).

**(4) Regarding claim 4:**

Poirier discloses all the subject matter as described in claim 1 above.

Poirier does not explicitly mention the incorporating of one or more reference markings in the negative jaw impression, where the reference markings are visible in the first and second images.

Simon et al., in analogous environment, teaches a system and method for the reduction and elimination of image artifacts in calibration of X-ray images, where using a calibration markers in the x-ray imaging path (column 4, line 50-52), (the use of calibration markers is read as the same concept as the use of reference marking visible in the first and the second image).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Simon et al., where using a calibration markings in the x-ray image, in the system of Poirier in order to reducing the visual distraction caused by the marker artifacts (column 5, line 41-44).

**(5) Regarding claim 6:**

Poirier discloses all the subject matter as described in claim 1 above.

Poirier does not explicitly mention the method, where the first and second digital images comprise voxels.

Simon et al., in analogous environment, teaches a system and method for the reduction and elimination of image artifacts in calibration of X-ray images, where each digitized image that is to be processed comprising pixel intensity (column 5, line 27, and line 39), (the pixel is read as voxel).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Simon et al., where each digitized image comprises voxels, in the system of Poirier in order to reducing the visual distraction caused by the marker artifacts (column 5, line 41-44).

**(6) Regarding claim 13:**

Poirier discloses the producing of a drilling template using the computer graphic model (column 3, line 21-29).

Poirier does not explicitly mention the use of the artifact corrected computer representation.

Simon et al., in analogous environment, teaches a system and method for the reduction and elimination of image artifacts in calibration of X-ray images, where using the artifact corrected computer representation (column 5, line 19-24), (the reducing of artifacts of an image is read as the same concept as the artifact- corrected image).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Simon et al., where using the artifact corrected

computer representation, in the system of Poirier in order to reducing the visual distraction caused by the marker artifacts (column 5, line 41-44).

**(7) Regarding claim 15:**

Poirier discloses the producing of model of the recipient jaw using the physical object (column 6, line 43-46 and the Abstract, line 5-9).

Poirier does not explicitly mention the use of the artifact corrected computer representation.

Simon et al., in analogous environment, teaches a system and method for the reduction and elimination of image artifacts in calibration of X-ray images, where using the artifact corrected computer representation (column 5, line 19-24), (the reducing of artifacts of an image is read as the same concept as the artifact- corrected image).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Simon et al., where using the artifact corrected computer representation, in the system of Poirier in order to reducing the visual distraction caused by the marker artifacts (column 5, line 41-44).

**(8) Regarding claim 17:**

Poirier discloses the using of recipient jaw model (column 6, line 43-46 and the Abstract, line 5-9) to produce a drilling template (column 3, line 21-29).

**(9) Regarding claim 18:**

Poirier discloses the using of the negative impression (column 6, line 43-46), (the negative impression is read as the physical object or model) of the recipient jaw (see



the Abstract, line 5-9), (the recipient jaw is read as gum surfaces and teeth), to produce the drilling template (column 3, line 21-29).

5. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poirier and Simon et al., as applied to claim 1 above, and further in view of Kruger (US 5,927,982).

**(1) Regarding claim 4:**

Poirier and Simon et al., disclose all the subject matter as described in claim 1 above.

Poirier and Simon et al. do not explicitly mention the incorporating of one or more reference markings in the negative jaw impression wherein said reference markings are visible in said first and second images.

Kruger, in analogous environment, teaches a three dimensional guidance system for dental implant insertion, where placing in the pontic teeth a radio-opaque landmarks which will be visible in the first and second images (column 3, line 34-40), (the first and second images are read as CT-scan or any appropriate imaging system).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Kruger, where placing in the pontic teeth a radio-opaque landmarks which will be visible in the first and second images, in the system of Poirier in order to clearly show the outline of the pontic teeth in relation to vertical and to the occlusal plane and surfaces needed for optimum placement of the implant (column 3, line 46-49).

**(2) Regarding claim 12:**

Poirier and Simon et al., disclose all the subject matter as described in claim 1 above.

Poirier and Simon et al. do not explicitly mention the setting of one or more drilling trajectories in the artifact-corrected computer representation.

Kruger, in analogous environment, teaches a three dimensional guidance system for dental implant insertion, where setting of one or more drilling trajectories in the artifact-corrected computer representation (Fig. 3, column 4, line 60-67, and column 5, line 1-6), (the setting of one or more drilling trajectories is read as the same concept as the setting of three dimensional orientation table, and the artifact-corrected computer representation is read as CT- scan).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Kruger, where setting the drilling trajectories, in the system of Poirier in order to clearly show the outline of the pontic teeth in relation to vertical and to the occlusal plane and surfaces needed for optimum placement of the implant (column 3, line 46-49).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Poirier and Simon et al., as applied to claim 1 above, and further in view of Lichkus et al. (US 6,488,503).

Poirier and Simon et al. disclose all the subject matter as described in claim 1 above. Furthermore, Simon et al. disclose the presenting of the image to the clinician

free of artifacts (column 7, line 48-52).

Poirier and Simon et al. do not explicitly mention the method, where forming an image of the upper portion of the first image and a lower portion of the second image where the upper portion is free of the artifacts.

Lichkus et al., in analogous environment, teaches a prosthetic teeth and method of making therefor, where forming an image comprising of at least one upper tooth and at least one lower tooth (Fig. 10A, column 10, line 18-21), (the forming of image of the upper portion of the first image and a lower portion of second image is read as the same concept as the displaying of one upper tooth and one lower tooth from the same image).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Lichkus et al., where displaying an image of an upper tooth and a lower tooth, in the system of Poirier in order to provide artificial teeth with an enamel layer having zones of constant thickness (column 2, line 51-52).

**Contact Information:**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571) 270-1670. The examiner can normally be reached on Monday through Friday 7:30 Am to 5:00 PM E.T..

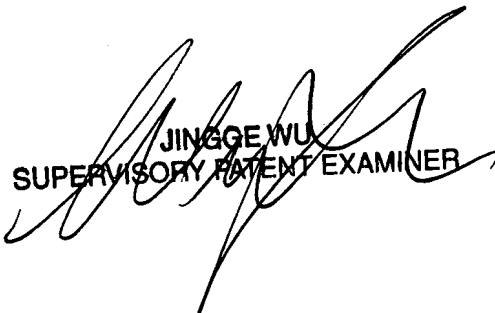
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wu Jingge can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Amara Abdi  
11/19/07

  
JINGGE WU  
SUPERVISORY PATENT EXAMINER